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FRUIT DISEASES

Purdue University

Cooperative Extension Service

West Lafayette, Indiana

Grape Black Rot

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Black rot is one of the most common and serious diseases of wild and cultivated grapes. The fungus attacks canes, tendrils, leaves, and fruit. The disease is most destructive in warm, humid areas. Before good control measures were developed, it was not uncommon for entire crops to be lost. However, it is now possible to maintain control of black rot using a combination of sound cultural practices, fungicides, and resistant varieties.

Symptom

Symptoms of black rot first appear as small yellowish spots on leaves. As the spots enlarge, a black border forms around the margins. The centers of the lesions become reddish-brown. By the time the lesions reach 1/8 to 1/4 inch in diameter, tiny black dots appear. These are spore-producing structures of the fungus. Often they are arranged in a ring pattern, just inside the margin of the lesion. Lesions may also appear on young shoots, cluster stems, and tendrils. These lesions are purple to black, oval in outline, and sunken. Fruit symptoms often do not appear until grapes are half grown. Small, round, light brownish spots form on the fruit. The rotted tissue in the spot softens and becomes sunken. The spot enlarges quickly, rotting the entire berry in a few days. The diseased fruit shrivels, becoming small, hard, black, and wrinkled. Raised, black spore-producing structures of the fungus form on the blackened, shriveled fruit. The shriveled, infected fruit are commonly known as "mummies". These mummies usually remain attached to the fruit cluster.



Shriveled "Mummified" fruit due to black rot infection

Cause

Black rot is caused by the fungus, *Guignardia bidwellii*. During winter, the fungus persists in cane and tendril lesions and fruit mummies. In spring, spores of the fungus are carried to young tissue by splashing or wind-blown rain. Infection of grape tissue occurs in less than 12 hours if temperatures range between 60 and 90 deg. F. Black rot infection will continue as long as rains and warm weather continue. Usually, infection is first seen on the lower leaves of vines 14-21 days after infection has occurred.

Control

1. Cultural Control:

Sanitation is CRITICAL in the control of black rot. Destroy mummies, remove diseased tendrils from the wires, and when pruning, if possible, leave only fruiting canes without lesions. If only a few leaf lesions appear in the spring, remove these infected leaves because the disease spreads rapidly after a few infections become established. Plant grapes in sunny open areas that allow good air movement. When grapes are exposed to light and good air circulation, they are less likely to have black rot. Good weed control also enables plants to dry more quickly.

2. Chemical Control:

A fungicide spray program, especially early in the season, is required for adequate control of black rot. Apply fungicides on a regular schedule starting when new growth is 4 to 6 inches long. Continue spraying on a 7- to 10-day schedule (7 days during wet weather, 10 days if dry) until berries start to change color. NOTE: Berries are no longer susceptible to black rot when they reach about 6 percent to 8 percent sugar content (usually when they start to change color.)

Important: fungicides act as a protective coat of "paint" on the leaf surface; where possible, apply fungicides just before a prolonged wet period occurs, not after.

Fungicides commonly available to backyard growers for control of black rot include: myclobutanil (sold as Immunox), and captan. Follow all label instructions regarding amounts of pesticide to use, method of application, and safety warnings. For further information on fungicides for commercial growers refer to: ID-169, "Indiana Commercial Small Fruit & Grape Spray Guide."

Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may be similar. Persons using such products assume responsibility for their use in accordance with current label directions of the manufacturer.

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